

I CLAIM

1. A restraint device comprising:

a housing having an opening and a reel rotatably disposed therein;

5 a tether having a first end attached to the reel and a second end located external of the opening, the tether wound about the reel; and

a non-Newtonian fluid disposed within the housing and acting on the reel.

10 2. The restraint device as in claim 1 further comprising a first strap attached to the housing, the first strap adapted to be secured about the torso of a person.

15 3. The restraint device as in claim 2 further comprising a first closure means for securing the ends of the first strap together.

4. The restraint device as in claim 2 further comprising a second strap attached to the second end of the tether, the second strap adapted to be secured about an arm of the person.

20 5. The restraint device as in claim 4 further comprising a second closure means for securing the ends of the second strap together.

6. The restraint device as in claim 1 wherein the tether is comprised of a first section removably secured to a second section.

7. The restraint device as in claim 1 wherein the housing is comprised of a first chamber and a second chamber fluidly sealed from the first chamber and such that the reel is disposed within the first chamber and a rotor is disposed within the second
5 chamber such that the rotor is mechanically connected to the reel such that rotation of the reel causes rotation of the rotor and wherein the non-Newtonian fluid is disposed within the second chamber.

8. A method of limiting the movement of a person's limb comprising the steps of:

10 providing a housing having an opening and a reel rotatably disposed therein and securing the housing to the person;

15 providing a tether having a first end and a second end;

20 attaching the first end of the tether to the reel, winding the tether about the reel, and securing the second end of the tether to the person's limb; and

25 placing a non-Newtonian fluid within the housing for acting on the reel.

9. The method as in claim 8 further comprising the steps of:

30 providing a first strap and attaching the housing to the first strap; and

securing the first strap about the torso of the person.

10. The method as in claim 9 further comprising a closure means for securing the ends of the first strap together.

25 11. The method as in claim 9 further comprising the steps of:

providing a second strap and attaching the second end of the tether; and

securing the tether to the limb via the second strap.

12. The method as in claim 11 further comprising a closure means
5 for securing the ends of the second strap together.

13. The method as in claim 8 wherein the tether is comprised of a first section removably secured to a second section.

14. The method as in claim 8 wherein the housing is comprised of a first chamber and a second chamber fluidly sealed from the
40 first chamber and such that the reel is disposed within the first chamber and a rotor is disposed within the second chamber such that the rotor is mechanically connected to the reel such that rotation of the reel causes rotation of the rotor and wherein the non-Newtonian fluid is disposed within the second chamber.

15. A device for limiting movement of a person's limb
comprising:

a housing;

an attachment member secured to the person's limb and mechanically connected to the housing; and

20 a non-Newtonian fluid disposed within the housing for limiting the movement of the attachment member.

16. The device as in claim 15 wherein the attachment member is comprised of a first arm and a second arm pivotally attached to the first arm within the housing.

17. The device as in claim 15 wherein the attachment member is comprised of a reel having a tether having a first end attached to the reel and a second end such that the reel is disposed within the housing and the second end of the tether is located external of the housing, the tether wound about the reel.

18. The device as in claim 15 wherein the attachment member is selected from the group consisting of a first arm and a second arm pivotally attached to the first arm within the housing, and a reel having a tether having a first end attached to the reel and a second end such that the reel is disposed within the housing and the second end of the tether is located external of the housing, the tether wound about the reel.

19. A restraint device comprising:

a first housing;

a first arm having a first end disposed within the first housing and a second end;

a second arm having a third end pivotally attached to the first end of the first arm, and a fourth end; and

a non-Newtonian fluid disposed within the first housing and acting on the first arm.

20. The restraint device as in claim 19 wherein the first housing is comprised of a first chamber and a second chamber fluidly sealed from the first chamber and such that the first arm is disposed within the first chamber and a rotor is disposed within the second chamber such that the rotor is mechanically

connected to the first arm such that movement of the first arm causes movement of the rotor and wherein the non-Newtonian fluid is disposed within the second chamber.

21. The restraint device as in claim 19 further comprising:

5 a second housing;

a third arm having a fifth end disposed within the second housing and a sixth end;

a fourth arm having a seventh end pivotally attached to the fifth end of the third arm, and an eight end; and

10 a non-Newtonian fluid disposed within the second housing and acting on the third arm.

22. The restraint device as in claim 21 further comprising a stabilizer connecting the first housing with the second housing.

23. The restraint device as in claim 19 wherein the first housing is comprised of a first chamber and a second chamber fluidly sealed from the first chamber and such that the first arm is disposed within the first chamber and a first rotor is

disposed within the second chamber such that the first rotor is mechanically connected to the first arm such that movement of the

20 first arm causes movement of the first rotor and wherein the non-Newtonian fluid is disposed within the second chamber and the

second housing is comprised of a third chamber and a fourth chamber fluidly sealed from the third chamber and such that the

third arm is disposed within the third chamber and a second rotor

25 is disposed within the fourth chamber such that the second rotor

is mechanically connected to the third arm such that movement of the third arm causes movement of the second rotor and wherein the non-Newtonian fluid is disposed within the fourth chamber.

24. The restraint device as in claim 21 further comprising a
5 first strap connecting the first arm with the third arm.

25. The restrain device as in claim 24 further comprising a second strap connecting the second arm with the fourth arm.

26. The restraint device as in claim 21 further comprising a stabilizer connecting the second arm with the fourth arm.

27. A method of restraining the movement of a person's lower leg
10 with respect to the person's upper leg comprising the steps of:

providing a first housing

providing a first arm having a first end disposed within the first housing and a second end;

15 providing a second arm having a third end pivotally attached to the first end of the first arm, and a fourth end;

providing a second housing;

providing a third arm having a fifth end disposed within the second housing and a sixth end;

20 providing a fourth arm having a seventh end pivotally attached to the fifth end of the third arm, and an eighth end; and

a non-Newtonian fluid disposed within the first housing and acting on the first arm and disposed within the second housing and acting on the third arm.

28 The method as in claim 27 further comprising a stabilizer connecting the first housing with the second housing.

29 The method as in claim 27 wherein the first housing is comprised of a first chamber and a second chamber fluidly sealed

5 from the first chamber and such that the first arm is disposed within the first chamber and a first rotor is disposed within the second chamber such that the first rotor is mechanically connected to the first arm such that movement of the first arm causes movement of the first rotor and wherein the non-Newtonian

10 fluid is disposed within the second chamber and the second housing is comprised of a third chamber and a fourth chamber fluidly sealed from the third chamber and such that the third arm is disposed within the third chamber and a second rotor is disposed within the fourth chamber such that the second rotor is mechanically connected to the third arm such that movement of the

15 third arm causes movement of the second rotor and wherein the non-Newtonian fluid is disposed within the fourth chamber.

30. The method as in claim 27 wherein a first strap connects the first arm with the third arm.

20 31. The method as in claim 24 wherein a second strap connects the second arm with the fourth arm.

32. The method as in claim 27 wherein a stabilizer connects the second arm with the fourth arm.